

sheet 7

□ عامل يميني (left factoring) و يميني (left recursion) عامل يميني

$$(a) s \rightarrow s + a \mid b$$

$$s \rightarrow bL$$

$$L \rightarrow \epsilon \mid +aL$$

$$(c) s \rightarrow abc \mid ac$$

$$s \rightarrow aL$$

$$L \rightarrow c \mid bc$$

$$(d) s \rightarrow aa \mid ab \mid a$$

$$s \rightarrow aL$$

$$s \rightarrow \epsilon \mid a \mid b$$

$$(e) s \rightarrow asc \mid asb \mid b$$

$$s \rightarrow b \mid asL$$

$$L \rightarrow c \mid b$$

$$(b) s \rightarrow s + a \mid s + b \mid c$$

$$s \rightarrow cL$$

$$L \rightarrow \epsilon \mid +M$$

$$M \rightarrow aL \mid bL$$

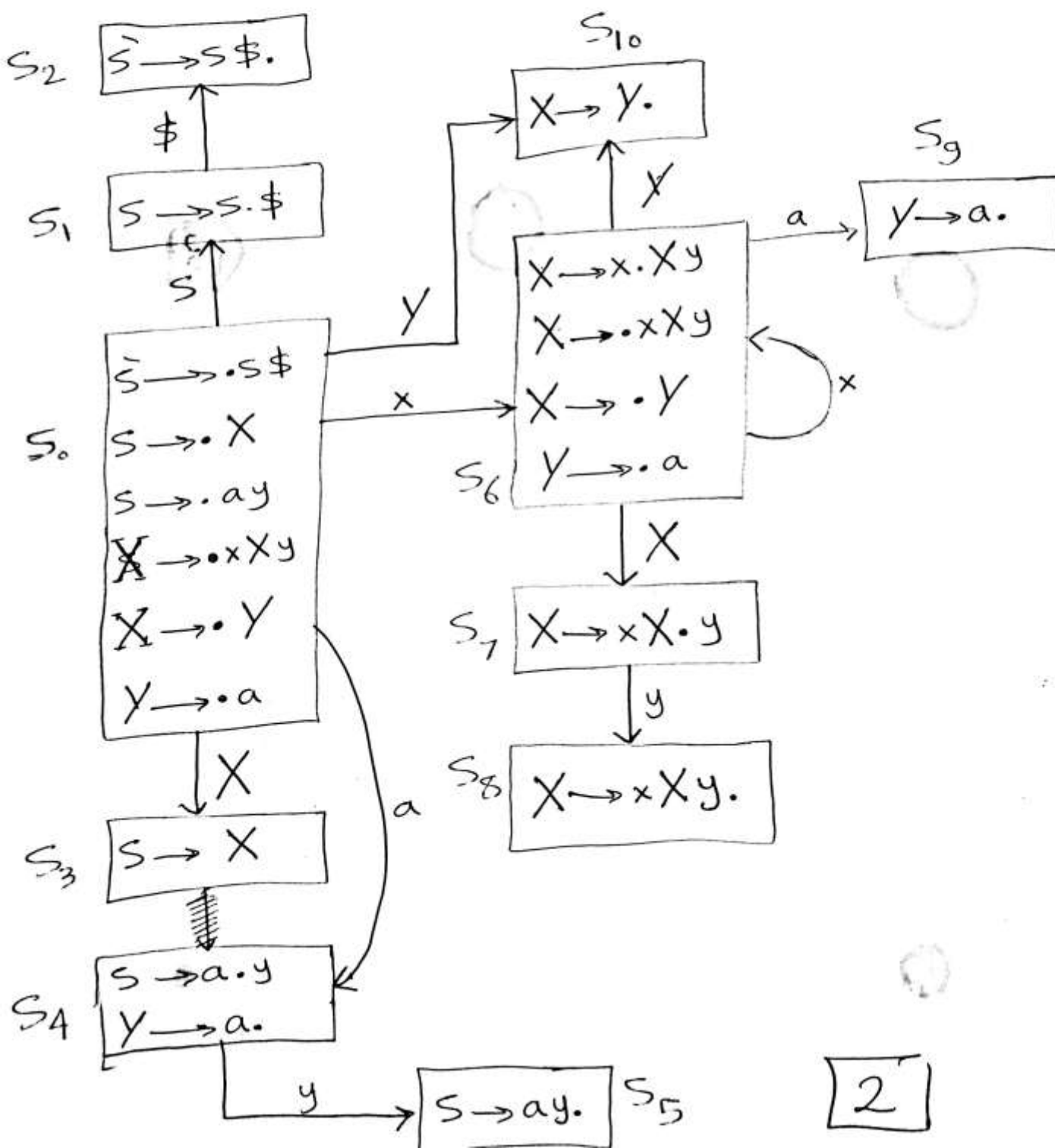
$$s \rightarrow cL$$

$$L \rightarrow \epsilon \mid \underline{+aL} \mid \underline{+bL}$$

غلط لا يميني (2-Plus)

$\boxed{2} \quad \bar{S} \rightarrow \cdot S$
 $S \rightarrow X \mid ay$
 $X \rightarrow xXy \mid Y$
 $Y \rightarrow a$

DFA for this grammar ??



$\boxed{2}$

← (Conflict) يعني واقف في حالة مشعار اعد
not SLR ← (reduce) ولا (shift)

b) because of state $S_4 \rightarrow$ not SLR
↳ shift-reduce conflict

c)

First(x) = x

First(X) = x, a

Follow(X) = \$, y

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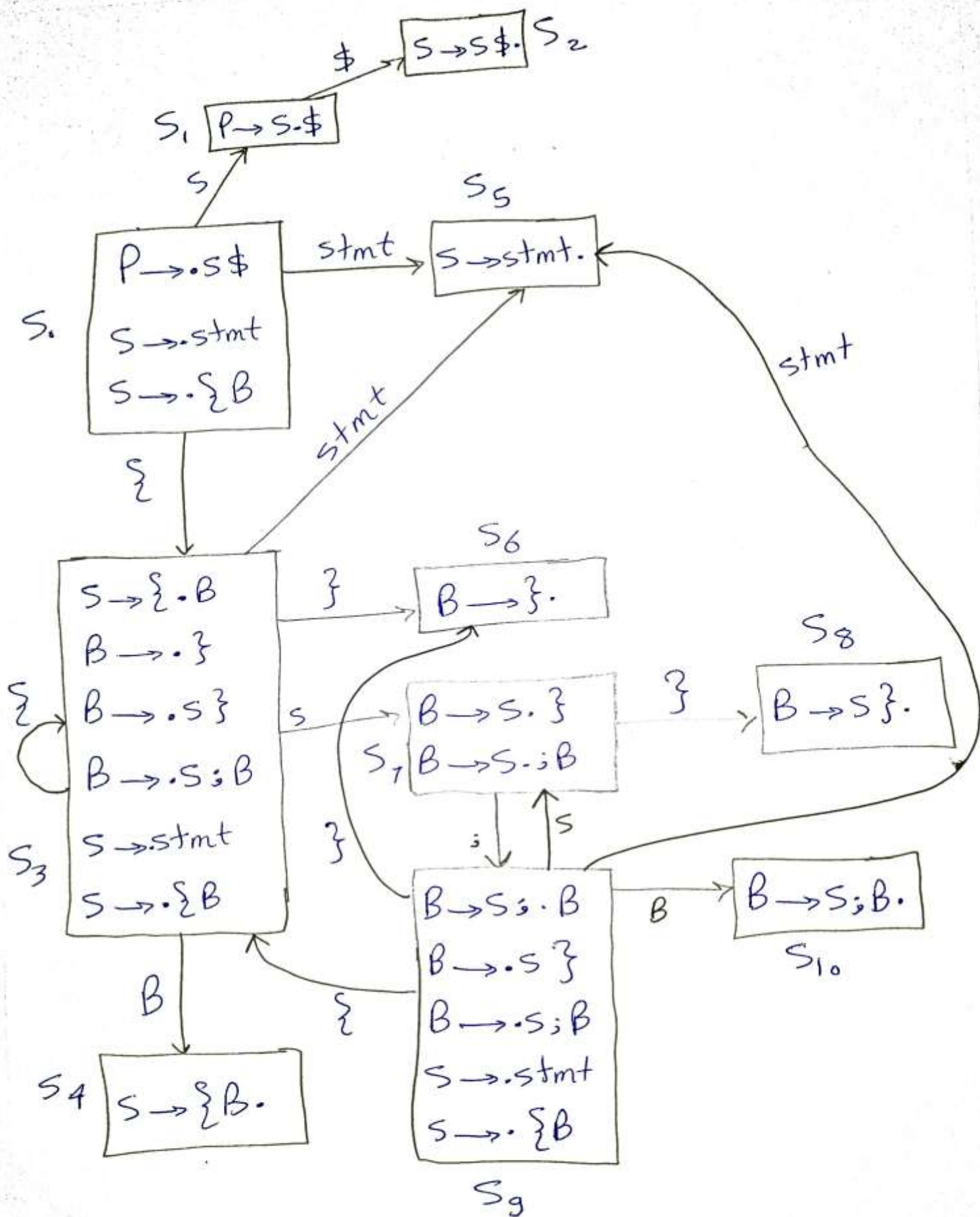
$P \rightarrow S$

$P \rightarrow$ starting symbol.

$S \rightarrow \text{stmt} \mid \{ B$

$B \rightarrow \} \mid \{ S \} \mid S ; B$

← الخلق في اللفظة القادة



دی آخر نقطه فی السؤال فی جمله 3

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{stmt ; }

← امشب بخواب (Parser) عینه لود خات (input) ده ادول
acceptstate

Configuration	DFA Half state	Action
$\cdot \{stmt ; \} \$$	S_0	shift
$\{ \{stmt ; \} \$$	S_3	shift
$\{stmt ; \} \$$	S_5	$\{ ; \} \in \text{Follow } S$ reduce $S \rightarrow stmt$
$\{ S \cdot ; \} \$$	S_7	shift
$\{ S ; \cdot \} \$$	S_9	shift
$\{ S ; \} \cdot \$$	S_6	$'\$' \in \text{Follow } B$ reduce $B \rightarrow \}$
$\{ S ; B \cdot \$$	S_{10}	$'\$' \in \text{Follow } B$ $S ; B \rightarrow B$
$\{ B \cdot \$$	S_4	$'\$' \in \text{Follow } S$ reduce $S \rightarrow \{ B$

$S \cdot \$$

S_1

' $\$$ ' $\in$ follow P
reduce $P \rightarrow S$

$P \cdot \$$

Accept state

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